Avinash Chauhan

BS-MS in Mathematics | IISER Thiruvananthapuram

+91 6397336538 avinash23@iisertvm.ac.in LinkedIn GitHub

Personal Profile

Mathematics undergraduate with a strong foundation in Computational Mathematics and Data Science. Skilled in Python and SQL, with practical experience in statistical modeling and Deep Learning. Seeking opportunities to apply analytical methods to solve real-world data-driven problems.

Education

Indian Institute of Science Education and Research (IISER) Thiruvananthapuram, Kerala
BS–MS in Mathematics — Aug 2023 – May 2028
CGPA: 7.08 / 10

Relevant Coursework: Artificial Intelligence, Machine Learning, Linear Algebra, Multivariable Calculus, Numerical Analysis, Optimization Techniques and Linear Programming, Probability, Ordinary Differential Equations, Mathematics for Data Science, Mathematical Statistics.

Gyan Deep Sr. Sec. Public School, Shikohabad (Firozabad), Uttar Pradesh
Higher Secondary Education (Science) — Aug 2020 – May 2022
Percentage: 95.4%

Sir Bilal Convent School, Prem Nagar, Firozabad, Uttar Pradesh
High School — Jan 2018 – May 2020
Percentage: 94.6%

Skills

- **Languages:** Python, SQL, R, C++.
- **Libraries:** TensorFlow, Keras, Scikit-Learn, Pandas, NumPy, SciPy, Matplotlib.
- **Machine Learning:** Regression, Clustering (K-Means, DBSCAN), Dimensionality Reduction (PCA, t-SNE), Neural Networks (CNNs, Transformers).
- **Tools:** Git, GitHub, Jupyter Notebooks, LaTeX.

Projects

- **Customer Segmentation Analysis** — Python, SQL
  Pre-processed raw transaction data using SQL queries to filter outliers and aggregate customer spend. Segmented purchasing behavior using PCA and K-Means clustering to identify high-value customer groups. Link

- **Prey Population Dynamics (Lotka–Volterra Model)** — Python, SciPy
  Simulated predator-prey interactions by numerically solving Lotka-Volterra ODEs and validated the results against the historical Hudson Bay hare-lynx dataset. Link

- **Malaria Parasite Detection using CNNs** — Python, TensorFlow
  Developed a Convolutional Neural Network to classify malaria-infected blood cell images from an official medical imaging dataset, demonstrating the application of deep learning to healthcare analytics. Link

Additional Courses

- **Introduction to Artificial Intelligence** — Google Oct 2024
  Covered supervised and semi-supervised learning and introductory neural networks.

- **Quantitative Market Research** — IIM Bangalore (SWAYAM) Jan 2025
  Covered data collection, sampling methods, consumer behavior analysis, and statistical computational techniques.

- **Mastering Deep Learning** — IIM Bangalore (SWAYAM) Jan 2025
  Covered deep learning fundamentals, model architectures, and attention mechanisms including transformers and self-attention.

Conferences & Workshops

- **WEKA: Exploring Machine Learning for Health Care** IIT Madras
  Workshop on applying ML techniques in medical diagnostics and healthcare analytics.
- **INUPi2i: Indian Nanoelectronics Users' Programme** (Idea to Innovation)
  Focused on nanoelectronics fabrication and characterization techniques.
- **Deloitte: AI Agents in Action** Essentials & Best Practices
  Covered implementation strategies for AI agents and industry best practices.
- **International Conference on Latest Advances in Computational and Applied Mathematics (LACAM 2025)** IISER Thiruvananthapuram
  Dec 2025
  Attended the international conference on computational mathematics, covering:
  - Numerical analysis and PDEs
  - Scientific computing and machine learning
  - Organized in collaboration with the University of Heidelberg.